

# BACTERIAL STEM AND LEAF ROT OF DIEFFENBACHIA

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In 1975, *Dieffenbachia* comprised about 7% of foliage plant sales in Florida's 150 million dollar foliage industry (3). Various species and varieties are grown, mostly in containers, for their beautiful and varied foliage patterns. A serious wilt and soft rot was reported on plants in southern California in 1960 (2) and in Florida during 1961. McFadden (1) described the causal agent as *Erwinia dieffenbachiae* McFadden, but now the accepted name of the bacterium is *E. chrysanthemi* Burkholder, McFadden, and Dimock, as designated by Munnecke (2).

**SYMPTOMS.** On stems, lesions may appear above or below the soil line. The lesions are water-soaked, soft and grayish at first, later becoming tan to pale brown, sunken, and irregular in shape. A clear demarcation line separates the diseased and healthy tissue (Fig. 1A). Affected plants may produce stunted, pale yellow terminal leaves. Under favorable conditions of high humidity, high temperature, and poor ventilation, stem lesions advance, causing the lower leaves to yellow and die. Often, the bacteria become systemic, invading the petioles and midribs. Such areas become water-soaked and brownish in color; the leaves collapse and become soft and mushy (1).

On leaves under favorable conditions, water-soaked spots enlarge, become sunken, and have light tan centers and darker brown borders. When the bacteria invade the large veins and midrib, advancement into the petiole and stem often follows, resulting in yellowing and collapsing of the leaves (Fig. 1B) (1).



Fig. 1. *Erwinia chrysanthemi* on *Dieffenbachia* sp. A) Soft, sunken canker on stem. B) Leaf infection moving down the midvein to the stem. (DPI Photo #702020-5 and 702020-7)

DISSEMINATION. The pathogen is spread by contaminated knives and tools used in cutting and handling dormant canes or in taking tip cuttings. Cane sections or tip cuttings may appear healthy at planting, yet be contaminated or systemically invaded if taken from diseased plants. The bacteria are also spread by splashing from overhead irrigation and rains (1).

CONTROL. Rogue all obviously infected plants and disinfest the growing area as well as all tools, knives, etc., used in propagation with steam or other means. All cuttings should be immersed in 200 ppm Agri-mycin 100 for 15 minutes, followed by immersion in hot water at 49 C for 40-60 minutes, depending on cane size (1, 2). The stock should be kept separate from old stock, and the old stock should be discarded after a sufficient quantity of disinfested canes are produced (2).

SURVEY AND DETECTION. Plants with stunted, yellow tip leaves, or dying, mushy older leaves are suspect. Inspect stems of plants near soil line for sunken lesions, as these may occur even when the plants appear healthy. The disease will be most active and prevalent during the hot and rainy summer months.

#### LITERATURE CITED.

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2. MUNNECKE, D. E. 1960. Bacterial stem rot of Dieffenbachia. *Phytopathology* 50:696-700
3. SMITH, C. N., and J. R. STRAIN. 1976. Market outlets and product mix for Florida foliage plants. *Proc. Fla. State Hort. Soc.* 89:274-278.

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